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AUTHOR Pagano, John
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ABSTRACT

These two papers offer parents of infants and toddlers with developmental disabilities and feeding problems both general advice and specific intervention strategies. The first paper examines the causes of feeding difficulty (such as a physical structure problem, fear of eating, or difficulty learning to eat); the need for intervention while simultaneously assuring that the child gets adequate nutrition; indications of a possible eating difficulty (such as resisting feeding); the role of physicians and therapists; and other resources. The second paper offers specific strategies for teaching the infant how to eat by mouth. These include behavioral strategies (such as rewarding acceptance of new foods with a favorite food), careful positioning for feeding, and provision of appropriate sensory oral-motor input through systematic facial and gum massage. (DB)

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John Pagano
63 Evergreene Condos
Wallingford, CT 06492

Initial Considerations for Helping Your Infant Learn to Eat

by John Pagano, MS, OTR/L

Many children with developmental disabilities have eating problems. One study of children with cerebral palsy found that 40% had eating problems.(1) Feeding problems may occur in one or more of the phases of the eating process. First, infants must take food or liquid into their mouths and transport it back for swallowing. Next they must swallow the food. Finally the food must be transported through the digestive system and be appropriately digested. Problems in any phase of eating, from difficulty with the initial suck to constipation, can interfere with eating.(2)

The causes of a feeding difficulty may be a physical structure problem, fear of eating, abnormal movement, communication problems, difficulty with the sense of touch in the mouth, or difficulty learning to eat. Often more than one of these factors is making eating difficult. Parents have told me of their frustration with "expert" suggestions from extended family members, and even doctors or therapists, regarding what

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they are doing wrong that is causing their child's eating problem. Feeding problems are not due to parental inadequacy, they are caused by significant problems including those listed above. Parents have an in depth feel for their child which enables them to learn to carry out treatment strategies with great skill once the problem is determined and appropriate treatment strategies are developed.

Recent studies show that infants do not outgrow eating problems without intervention. (3) Difficulties with eating need to be improved while simultaneously assuring your child is getting adequate nutrition for brain and muscle growth. Tube feeding and oral feeding are the two major ways to assure this, and choices regarding the use of tube feeding to supplement oral feeding are often challenging. If eating by mouth is medically unsafe or inadequate for providing adequate nutrition, a tube can be placed into the stomach through the nose (e.g. nasogastric tube) or directly inserted into the stomach (e.g. gastrostomy tube. The nasogastric tube is usually used for a period of 3 months or less. The gastrostomy tube is preferable for long term nutritional support, but requires an initial operation. Studies have shown increased weight and length in infants as a result of tube feeding. (1)

Your physician can determine whether your infant's nutritional intake is adequate for his growth and development. Statistics are available to compare your infant's length and weight with a cross-section of infants of the same sex and age. If your infant's weight puts him in the fifth percentile, in an average group of 100 children he would be bigger than 5 and smaller than 95. Using this reference, the doctor can monitor growth over time as a guide for intervention decisions.

Parents can notice a variety of problems that may indicate their infant is having eating difficulties. Some infants have reflux, where the stomach content is frequently vomited back up after it has been mixed with stomach acid, causing a very unpleasant experience and possibly interfering with weight gain. Other infants resist not only feeding, but any touch on or in their mouths. Another possible indication of feeding problems is difficulty with the normal progression of eating skills. If your infant was premature, subtract for the number of weeks early in considering these guidelines. Newborns should suck liquid without coughing or choking. Infants can usually use their lips to remove food from a spoon by six months, and chew by a year and a half. If your child has a problem gaining adequate weight or developing functional eating

skills, the doctor may want to do additional testing to see if there are stomach or swallowing problems.

Feeding is a pediatric sub-specialty, and it is important to seek out professionals with experience helping children with eating problems. For children with many physical problems requiring testing and specialists, it is helpful to find an experienced pediatrician to help you coordinate treatment. Doctors who may be involved include developmental pediatricians, gastroenterologists, pulmonologists, and otolaryngologists. They can evaluate the medical causes of the eating problems (e.g. swallowing functions, food transport to the stomach). They may prescribe diet, medicine, or surgery if indicated.

Occupational, Speech, and/or Physical Therapists are a valuable resource for evaluating feeding skill development, as well as managing and improving your child's eating skills. Parents reported that therapy, which included teaching them strategies to help their infant, made feeding easier.(4) Therapists will assess the development of eating skills (e.g. taking food from a bottle or spoon, chewing) and develop goals in conjunction with the family. Treatment strategies include positioning, touch input, behavioral strategies, food suggestions,

placement of food in the mouth, and game-like exercises. Treatment must be individualized by the therapist to the specific needs of your infant. Look for a therapist with recent graduate courses and experience in feeding, who you feel comfortable with as a person. Dietitians can also be a valuable resource for helping with diet suggestions for weight gain and eating skill improvement. Everyone who works with your child should coordinate their efforts.

There are also several written resources for learning about your child's problems and ways to help. Books and articles on the normal development of eating skills are the best place to start. Once you understand this normal progression, articles on treating feeding problems will be helpful. Several books, ERIC documents, and articles related to normal feeding and treatment of feeding problems are available (see reference list following this article). Dysphagia, oral-motor skills, and mastication are commonly used search terms for literature on feeding problems.

Many infants with a history of eating problems begin to demonstrate behaviors that interfere with eating, a problem referred to as conditioned dysphagia. The infant may learn to associate unpleasant

consequences with eating, and refuse to eat even after all physical problems have been resolved. Avoiding force feeding, and providing oral-motor therapy for infants receiving tube feeding can help prevent this problem, but it may develop anyway. Social Workers can assist you in coping with behavioral problems and provide support to better enable you to assist your child. A combination of behavioral and oral sensory-motor strategies are often helpful with conditioned dysphagia.

Feeding is an important skill for survival and socialization, and serves as a foundation for other developmental areas. It is important to monitor your infant's growth and eating skill development, and to get professional assistance when problems occur. The coordinated efforts of the family and all the professionals working with your infant is important to best guide him toward functional eating.

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John Pagano
63 Evergreene Condos.
Wallingford, CT 06492-2976

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Strategies To Promote Oral Eating in Infants

by John Pagano, MS, OTR/L

Initial problems with learning to eat can occur for infants. They are especially common with those born prematurely or with physical or developmental disabilities. While parents are sometimes blamed for the feeding difficulty, it is not their fault. In fact, your caring knowledge of your infant places you in the most powerful position to help. Parents and therapists have several possible strategies they can use to help infants learn to eat by mouth. This article describes some of these strategies so you can more easily remember these methods, and share them with others who feed your child. Once your physician has evaluated your infant and approved oral eating, review this article with your therapist. Your therapist can check which of these strategies applies to your infant, and write down the appropriate modifications.

Behavioral Strategies Infants may "learn" to fear and avoid eating based

on past eating problems that have been resolved. Behavioral strategies encourage children to eat new foods so their eating abilities can develop.

Behavioral techniques which may be helpful include:

1. Use of toys or music as distractions throughout eating may be helpful for initially eliminating resistance to eating, but should be gradually discontinued as soon as they are no longer essential.

2. An initial brief play period before the meal.

3. Offering two food choices, and trying to determine the infant's preference (e. g. by food looked at or touched).

4. Providing praise or music when your child eats.

5. Giving favorite foods to reward acceptance of new foods, and alternating favorite foods with the new foods. (1)

Positioning for Feeding Positioning is a vital concern for feeding. Because the lip and tongue muscles must work in a refined way, infants often need a more stable than usual position while eating. Stability of the head is essential for lip and tongue control. Further, a stable trunk is the foundation for supporting the head. Just as the bottom portion of a building must be stable for the top portion to be safely added, the stableness of the trunk and head are essential for eating.

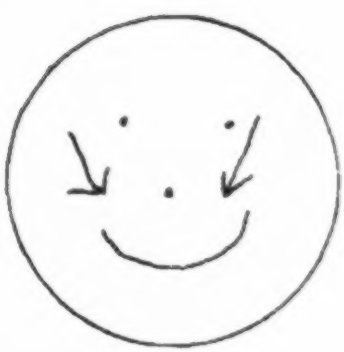
Whether the child is held or positioned in a chair, an upright midline head position is usually optimal for eating. This non-extended neck position is important. The neck is part of two pathways, one to the lungs for air and the other to the stomach for food. A straight, non-extended neck position helps food to go to the stomach, rather than the lungs where it can cause choking or pneumonia. Infants are small and their short throat structures help protect the airway from food. As a child grows, the neck grows, increasing the distance between these structures and the chance of food and liquid going into the lungs. It is important therefore to keep infants from developing the habit of eating with an extended neck. (2)

An extended neck position is used in C. P. R. because it helps open the pathway to the lungs. To promote food going to the stomach, the chin should be tucked but not all the way down on the chest. An angled bottle will enable you to feed with chin tuck, and not need to tilt the bottle back when getting to the end of feeding. For infants who hold their own bottles, a self-feeding bottle straw will promote holding the bottle down with chin tuck so they can get liquid from the bottle. An upright, symmetrical position of the trunk will support this head position. In

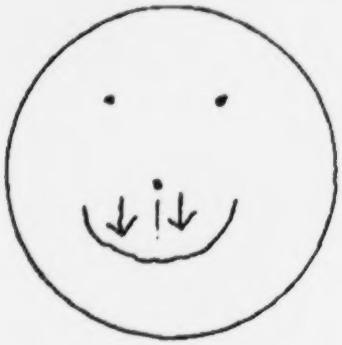
addition, a straighter less rounded trunk position may be helpful for children with reflux.(3) In other words, the neck should be straight or slightly flexed but not extended back.

Sensory Oral-motor input Touch on the face and inside the mouth may be used to decrease over-sensitivity to touch and help infants learn to eat. It is done slowly, with a pause after each input, and only when tolerated without fussing. This input provides a sense of organization through deep slow touch on the face provided in the following manner:

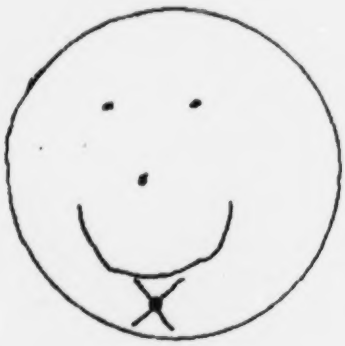
1. Rub downward 3 times, toward the mouth, on both cheeks simultaneously.



2. Rub downward 3 times, toward the mouth, on both lips simultaneously.



3. Press inward on the bottom lip, so the bottom lip pouts out. The x denotes the area to be pressed.(4)



(5)

Once this is accepted the round bristled NUK toothbrush trainer (available at Toys R Us) can be used on the gums. Rub it on each half of the bottom teeth/gums individually, pausing between. Then individually

do the two halves of the top teeth/gums. Next brush the front middle of the tongue. Then touch the roof of the front center of the mouth. Finally do on the tongue one more time. (4)

Except for positioning, do not worry about implementing the strategies all the time, they will be helpful whenever you get the chance to use them. After using a strategy regularly for at least two weeks, you can determine its effectiveness and the need for modifications or a complete change in strategies. All strategies need to be done cooperatively with your doctor and all the therapists working with your child.

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